# 6 Strengthening California's Conservation Capabilities

## 1. Resource Assessment

Resource assessment, the monitoring and study of wildlife populations, habitats, and ecosystems, has long been recognized as a fundamental requirement for effective conservation, restoration, and management. It was noted in a 1926 edition of *California Fish and Game* that "the best insurance that the state can take out . . . is to see that facilities for study and investigation are enlarged upon. The lack of biological data is, without a doubt, one of the greatest single factors in retarding development of a larger conservation program."

All aspects of wildlife management, particularly efforts to restore species at risk, depend on biological information. The increasing stresses on wildlife resources, including the loss, degradation, and fragmentation of habitats, effects of water diversions, and proliferation of invasive species, have further increased the need to assess the status and trends of wildlife species and ecosystems in California.

At present, Fish and Game can assess only a fraction of the species and habitats throughout the state, and wildlife managers often must make decisions and recommendations with limited information. To effectively monitor species populations and ecological trends, Fish and Game needs an expanded, comprehensive, statewide program that coordinates wildlife assessment activities.

### *The Role of Resource Assessment in Wildlife Conservation*

State and federal wildlife agencies, nongovernmental conservation organizations, biological consultants, and private landowners use information gathered from field monitoring of wildlife populations

and environmental indicators to make conservation decisions. Such resource assessment information is used to:

- **Support wildlife and environmental recommendations and regulatory decisions.** To reduce environmental impacts of various land uses, state and federal wildlife regulatory agencies require changes in development projects, recommend changes in timber harvest plans, and determine the appropriate conditions under which to issue permits to **take** endangered species and to permit activities in rivers and streams and wetlands.
- **Design habitat restoration projects and effective mitigation for development.** Conservation of many species at risk involves restoring aquatic and terrestrial habitats. Resource assessment provides the information needed to design successful habitat restoration or mitigation projects.
- **Prepare multispecies regional conservation plans.** Designing conservation plans at the regional scale, including appropriate wildland reserves, involves compiling ecological information on dozens of species and on the aquatic and terrestrial ecosystems. Long-term information is needed to indicate trends of species populations and natural communities and rates of change and the responses of ecosystems and wildlife to stressors. The implementation of these conservation plans also requires monitoring to assess if conservation goals are met and whether plan adjustments are needed.
- **Prepare management plans for public lands to restore and maintain wildlife habitat.** The U.S. Forest Service, BLM, California State Parks, the National Park Service, Fish and Game, and other local agencies and districts evaluate available biological information to prepare resource management plans for public lands.

### *Elements of Resources Assessment*

Resource assessment involves several important functions to guide field research, to manage data, and to make that information available to wildlife managers and conservation project managers. These functions include:

- **Prioritizing field research and wildlife monitoring projects.** It is neither practical nor economical to inventory all species and habitats in every geographic area of California. One function of a resource assessment program should be to coordinate the development of resource assessment priorities among the various public and private efforts.
- **Designing efficient resource assessment strategies.** A resource assessment program should also design and implement analytical approaches and monitoring strategies that gather the most useful information in the most efficient manner. Well-designed field monitoring and research uses methods that generate results that then may be broadly applied to assist various conservation efforts.

- **Facilitating collaboration among wildlife biologists, plant ecologists, range specialists, hydrologists, and numerous other technical disciplines to achieve more comprehensive assessments.** These broader assessments provide more complete information regarding the status and trends of natural communities and ecosystems.
- **Standardizing data collection and management protocols.** Numerous state and federal natural resources agencies, private landowners and firms, and dozens of academic and research institutions are involved in monitoring wildlife and ecosystems in the state, and each agency usually conducts field research to support its specific management needs. Consulting firms conduct wildlife and natural resource surveys to support CEQA documentation for projects. Ideally, the field data collected by these various organizations in a particular region of the state could be assembled like pieces of a puzzle that would then provide a more comprehensive understanding of wildlife populations and ecosystems. However, different objectives, data-collection protocols, or scales are often employed, and the data collected by one institution is not comparable to data collected by another. A resource assessment program should facilitate implementation of standard procedures and protocol for the numerous kinds of wildlife and ecosystem assessments and data management.
- **Compiling and organizing data and information.** Research and monitoring of wildlife and natural communities generate a tremendous volume of data. It is a significant management task to organize this information to make it available for researchers and public and private wildlife- and land managers. Data management involves designing common formats and protocols; developing programs to manage databases; providing access to the information; and facilitating the sharing of wildlife and ecosystem information by land managers, wildlife managers and researchers, private landowners, and others involved in making conservation decisions.

### *Fish and Game's Resource Assessment Efforts*

Fish and Game has conducted various wildlife resource assessment functions for decades. However, over the last 30 years, the resource assessment activities of the department have been significantly reduced. Budget reductions have reduced the department's field research capabilities, and field biologist positions have gradually become primarily desk positions to process, evaluate, and prepare environmental documentation to meet the requirements of CEQA, CESA, streambed alteration agreements, and other laws.

In the past, Fish and Game had a greater field research presence, often publishing results in articles in the department's own scientific journal, *California Fish and Game*, in Administrative Reports, and in other scientific journals. Larger studies on fish species were published in the *Fish Bulletin* series. Fish and Game used to maintain technical libraries, including a Marine Information Technical Center in Long Beach. These libraries and information centers were closed in the last decade due in part to the anticipation that this kind of wildlife and technical information would become available electronically.

However, today, Fish and Game scientists have
very limited access to the scientific literature now available electronically by subscription.

Nevertheless, Fish and Game continues to maintain several resource assessment functions. Several units of the department design and conduct projects to inventory and monitor wildlife populations or ecosystem indicators. The Habitat Conservation and Planning Branch, the Central Valley Bay Delta Branch, the Native Anadromous Fish and Watershed Restoration Branch, the Wildlife and Fisheries Program Branches, the Department's Marine Region, and the Scientific Branch of the Office of Spill Prevention and Response are all engaged in some field studies.

Fish and Game continues to manage species and habitat data, particularly information regarding species at risk. The department develops data management protocols and serves as a hub for the collection and management of resource assessment data. The department manages the California Natural Diversity Database, the Vegetation Classification and Mapping Program, the Biogeographic Information and Observation System, and the California Wildlife Habitat Relationships information system. Fish and Game also compiles information on and evaluates the status of threatened and endangered species and species of special concern and produces status reports on those species.

In recent years, Fish and Game has assigned several existing staff to build a resource assessment program (RAP) to develop and implement a long-term strategic program to inventory, monitor, and assess priority species and natural communities. RAP is intended to enhance consistency of field monitoring products, improve coordination among biological disciplines, and ensure that specific monitoring programs and activities throughout the state are focused on obtaining important and useful information for resource managers and for the public. In 2005, RAP initiated a survey of wildlife assessment and monitoring efforts statewide. The survey was designed to provide a summary of current wildlife monitoring efforts in California, identify resource assessment gaps and needs, and facilitate communication among different individuals, organizations, and agencies.

RAP has begun assisting outside organizations and researchers to manage data and is reaching out to other agencies and institutions to help coordinate wildlife resource assessment work. To date, collaborative agreements have been initiated with the Wildlife Health Center at UC Davis, the Center for Conservation Biology at UC Riverside, the UC White Mountain Research Station, and the U.S. Geological Survey–Western Ecological Research Center to assist Fish and Game to develop and implement resource assessment and monitoring strategies. One objective of these collaborations is to generate interest among academic institutions in addressing applied research questions that are relevant to various conservation efforts.

Among state agencies, Fish and Game works with the departments of Parks and Recreation, Forestry and Fire Protection, Water Resources, and Transportation on resource assessment projects. RAP is coordinating with Parks and Recreation's Inventory, Mapping, and Assessment Program (IMAP) to achieve consistency in plant and animal surveys.

Key federal agencies, including the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the U.S. Geological Survey, the National Park Service, the Bureau of Land Management, and the U.S. Forest Service, are important collaborators in developing monitoring programs of California wildlife and habitats. Coordination with the U.S. Fish and Wildlife Service on resource assessment occurs through threatened and endangered species recovery efforts, Natural Community Conservation Planning, and other large-scale conservation planning efforts. Species and habitat monitoring of areas covered under conservation plans is a priority for resource assessment. The U.S. Forest Service has recently identified priority species to monitor to inform their land management decisions. RAP is implementing efforts to survey and then monitor several of these species, including the willow flycatcher, great gray owl, and various amphibian species.

Half of the state's lands are privately owned. Fish and Game also works to develop cooperative relationships with private landowners and local governments to monitor species and habitats on private and municipal lands.

### *California's Need for an Expanded Resource Assessment Capability*

Despite the efforts and collaborations described above, there are large gaps in resource assessment, and very little is known about many species populations in California. While Fish and Game, other state and federal agencies, universities, and private landowners are involved in resource assessment activities, very limited funding is available for field studies to gather basic biological information. Many of the state's programs described above have only a few staff statewide. Fish and Game's various field programs can assess only a small selection of habitats across the state. Consequently, wildlife managers and conservation planners must routinely make decisions with limited information about the status of species or ecosystems. Conservation efforts to maintain wildlife diversity would be more effective if the state strengthened its capacity to conduct and coordinate resource assessment.

## 2. Conservation Planning

*This section on Conservation Planning was authored by Gail Presley, Habitat Conservation Planning Branch, California Department of Fish and Game. It will be included in a forthcoming volume scheduled to be published in 2006 by Resources for the Future Press.*

Land-use and development decisions are made primarily at the local and regional level on a project-by-project basis, often without adequate protections for important habitats and wildlife populations. Some state and federal programs provide incentives to encourage local project decisions to better ac-

commodate the needs of wildlife conservation. However, those incentives are often limited compared to other economic considerations.

Private land in California comprises approximately 51 percent of the state, and many endangered or declining species are dependent on habitat on private lands for their survival. Fifty-eight counties and some 470 incorporated cities are the primary land use decision-making bodies for undeveloped private wildlands of the state, regulating land use via planning and zoning regulations, subdivision controls, and building permits. Maintaining wildlife diversity and reversing the trend of declining species depend on integrating conservation and habitat restoration into local land-use decisions.

Because existing state and federal laws were not designed to maintain essential habitats and abundant wildlife, a new policy framework is needed to prevent the loss of key habitats and to halt the decline of species at risk. The California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), and the federal Endangered Species Act (ESA) are the preeminent laws for minimizing the effects of development on wildlife and habitats; several other resource-protection laws require permits for activities on such specific habitats as forest lands, wetlands, and streams and rivers.

Since 1970, CEQA has required local governments to analyze the environmental effects of proposed development projects and to consider such projects through a public process. While the city or county is typically the lead agency over the environmental review, Fish and Game provides recommendations for avoiding, minimizing, and mitigating project effects on habitats, ecosystems, and wildlife, offering information about wildlife resources and giving guidance on how a project can be modified to protect sensitive habitats. Fish and Game's recommended changes to proposed projects are advisory. Fish and Game lacks the staff to comment on many projects, and local projects are often approved without review by a biologist employed by Fish and Game or a local agency.

CEQA mandates that local General Plans contain a conservation and open space element. However, the conservation elements usually do not contain an adequate assessment of what resources need to be protected to conserve wildlife, and conservation measures mentioned in General Plans are often not implemented.

The CESA and ESA were not crafted to provide a conservation framework to maintain abundant wildlife populations nor to protect sensitive habitats and healthy ecosystems. Rather, CESA and ESA are policies of last resort to protect species approaching extinction. CESA states that "… it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat and … to acquire lands for habitat for these species." The state and federal endangered species acts do not provide adequate protection for a species until it is in desperate shape. If the loss of habitat is the cause of the species decline, by the time the species qualifies for listing, recovery is challenging because it would likely require extensive and expensive habitat restoration.

The local project-by-project approval of new development, without measures to address cumulative effects of projects over time and across the region, leads to the slow dismantling and fragmentation of

important wildlife habitats, migratory corridors, and ecosystems. A development decision may appear to have negligible consequences for wildlife populations if it is destroying a small percent of the remaining habitat or wildlands in the project area. But, over time, the percentages add up, and habitat shrinks. Without the benefit of a regional conservation analysis, a land-use decision may develop a small patch of land that forever blocks an important regional wildlife migratory corridor or degrades a key ecosystem component important to wildlife diversity in the broader region. Without a thorough understanding of wildlife populations and their associations with plant communities, it is difficult to evaluate the wildlife-related consequences of project alternatives.

Despite the broad array of environmental laws, none is adequately designed to proactively conserve ecosystems and habitats necessary to sustain healthy wildlife populations. Lacking adequate incentives, scientific expertise, financial resources, and legal mandates, most local governments do not manage their jurisdictions for the long-term conservation of wildlife.

### *California's Regional Multispecies Conservation Program*

Having recognized the detrimental consequences of the local project-by-project approach to development approval, California over the last 15 years has implemented a voluntary multispecies regional approach to wildlife habitat conservation. The California Natural Community Conservation Planning Program (NCCP), administered by Fish and Game, takes a regional, multispecies approach to planning for the protection and perpetuation of biological diversity. A Natural Community Conservation Plan provides regional protection for plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The NCCP standard goes beyond mitigating for the effects of development to providing for the recovery of sensitive species in the plan area and conserving other species in the area.

The NCCP approach or similar regional multispecies approaches to conservation planning are essential to conserve habitats and ecosystems at a scale necessary to ensure long-term survival of species. See "Multispecies Conservation Planning Efforts," below.

Private lands with important habitat value are identified in an NCCP through the planning process and integrated into a scientifically validated system of reserves, including corridors and linkages with other natural lands, to be managed for the long-term conservation of species. The number of species covered by NCCPs ranges from 12 (Palos Verdes Peninsula) to 146 (Western Riverside Multi-Species Habitat Conservation Plan). NCCPs range in size from 8,559 acres (Palos Verdes Peninsula) to 1.2 million acres (Western Riverside MSHCP).

Creating a conservation plan involves a diverse array of stakeholders who represent their interests in a negotiated process. The process also provides opportunities for participation by the general public. In a typical conservation plan, a local lead agency (either city or county) coordinates a collaborative planning process. Working with landowners, development interests, environmental organizations, and

other interested parties, the local agency oversees the numerous activities that constitute the development of a conservation plan, including collecting ecological data; designing a reserve system; identifying proposed development; creating a monitoring and adaptive management program for the reserve lands; and determining funding for implementation. The state and federal wildlife agencies (Fish and Game, the U.S. Fish and Wildlife Service, and, where appropriate, NOAA Fisheries) are relied upon during all of these activities to provide the necessary support, direction, scientific expertise, and guidance to the conservation planning participants.

The desired result of this process is a comprehensive plan that provides for species conservation and management and, at the same time, approves development in areas that are less critical for wildlife. Under an approved NCCP, wildlife agencies may issue permits to authorize the take of species under the federal Endangered Species Act and NCCP Act. Species whose conservation and management are provided by the plan are called "covered" species. The NCCP Act gives Fish and Game the authority to permit take of any covered species (whether or not it is listed as threatened or endangered under the California Endangered Species Act). This authority provides an incentive to local applicants to cover certain species not currently listed, eliminating the need to reapply for additional permits should those species become listed in the future. Covering nonlisted species requires that those species be treated as if they were listed and can mean the protection of additional habitats, core areas, linkages, ecological processes, and improved reserve configurations that bolster the overall conservation strategy.

NCCP planning has expanded to 11 counties statewide, but Fish and Game does not have sufficient staff to provide the scientific assistance and planning required by these important and complex conservation efforts. Conservation of wildlife in many areas of the state will require a greater state commitment of scientific and planning resources in combination with incentives for local governments to collaborate in both planning and implementing regional conservation plans.

The wildlife agencies have embraced the benefits of regional conservation planning as the most effective conservation tool we currently possess. The alternative would be to process hundreds of individual permits for projects that would cause take of threatened or endangered species—an impossible workload, and one that would not address wildlife concerns at the ecosystem scale. Thus, even when these agencies know their staffing levels are inadequate, they encourage local jurisdictions to consider creating comprehensive plans to address all their sensitive wildlife issues. But counties and cities often become frustrated because these same staffing limitations constrain state and federal wildlife agencies from providing the needed conservation planning assistance in a timely manner.

### *NCCP Implementation Commitments*

The higher conservation standard of NCCP embodies both the concept and the Legislature's intent that the public share responsibility for a portion of the cost of conservation. In most of the NCCPs approved to date, the state and the federal government have agreed to contribute acres to the reserve

system and assist with management and monitoring, either in the form of grants to local partners or as land the agencies, themselves, hold. For example, state and federal agencies agreed to contribute 13,500 acres to the San Diego MSCP reserve system and 50,000 acres to the Western Riverside MSHCP reserve system. These agencies also agreed to conduct ecological monitoring and implement adaptive management to meet the plan standards on lands they acquire and hold.

As more plans near completion, local entities expect a similar level of state and federal contribution. The agencies, however, insist that the plans incorporate language stating that their commitments are subject to availability of budgeted funds. It is hoped that the state and federal funding streams will continue at levels sufficient to meet the needs of the plans. Without these contributions, most local governments would not be able to provide funding sufficient to implement agreed-upon plans.

Inherent in these commitments are the wildlife-agency staff positions that will be needed during implementation. Wildlife agency staff will continue to be involved in the land-use planning process, coordinating with local partners on plan implementation, monitoring program compliance, assessing land acquisition priorities, applying for grant funds, and participating in ecological monitoring and adaptive management. Over time, planning efforts will continue while the implementation workload will increase.

### *Integrating Conservation of Wildlife into Local Land-Use Decisions*

Developing NCCPs is one approach to regional multispecies and ecosystem conservation. However, over the next few decades, most development decisions will continue to be made outside the NCCP framework. Thus, conserving wildlife on private wildlands will require better integration of wildlife and habitat conservation into existing local land-use decision processes. New incentives and financial support for conservation, combined with regional analyses and coordination, are needed to bring about local land-use decisions that maintain habitats and ecosystems critical for maintaining wildlife diversity at the regional and statewide level.

Numerous species and species group conservation strategies have been initiated, covering greater sage-grouse, burrowing owl, tricolored blackbird, bats, major bird groups, Southern California fishes and other species. Consideration of these important conservation strategy documents needs to be integrated into local land-use planning processes as well.

Because the role of local land-use decisions in conserving wildlife is so important, the Wildlife Diversity Project held two one-day workshops (in Davis and Riverside) to discuss the barriers and opportunities for integrating wildlife conservation into local land-use decisions. The workshops developed recommendations for improving conservation efforts at the local and regional level.

## 3. Funding for Wildlife Conservation

Existing conservation programs and many of the conservation actions recommended in this report require additional funding. Halting the slide of species toward endangered species status will require new research, expanded conservation planning and management, greatly increased species assessment and monitoring, and major habitat restoration projects. But success or failure to conserve California's wildlife may well hinge on the level of funding dedicated to wildlife conservation and restoration programs over the next few decades.

The California Department of Fish and Game is the state's lead agency charged with conserving and restoring wildlife and ecosystems, responsibilities that have expanded and become more complex over the last three decades. Responding to the increasing problems affecting species and habitats, state policy-makers have enacted new wildlife conservation and environmental protection mandates. But lacking a broad-based reliable funding mechanism, Fish and Game is hard-pressed to implement many of these conservation programs, even at modest levels. Resource assessment, conservation planning, and dozens of tasks necessary to conserve wildlife species at risk are severely underfunded.

### *Expanding Responsibilities and Demands for Wildlife Conservation*

The problem of inadequate funding for wildlife conservation has been 30 years in the making. In light of the growing stresses on wildlife, Fish and Game has appropriately evolved from primarily managing fishing and hunting programs to serving as the public trust steward for all wildlife, habitat, and ecosystems, in addition to managing fishing and hunting programs. With the enactment of more than 20 conservation programs since 1968, Fish and Game's wildlife and wildlands stewardship role has expanded dramatically. Many of these measures have mandated major new workloads for Fish and Game without providing sufficient funding. (See Mandated Responsibilities of Fish and Game Since 1968, below.)

### *Increased Demands on Conservation Agencies by Growth and Development*

Rapid growth and development, water diversions from creeks and rivers, invasions of exotic species, growth in off-road vehicle recreation, and numerous other activities that affect wildlife have demanded additional efforts of wildlife scientists and conservation managers.

With expanding development, California's unique habitats are shrinking. Maintaining healthy populations of species on fragmented and smaller areas of habitat requires more intensive management, environmental review, conservation planning, monitoring, mitigation project design, and habitat restoration work. Accompanying growth and development is an increasing demand by the public for recreational access to public land, waterways, and ocean resources and greater pressure to develop wildlands that now provide key wildlife habitat, all of which involves more work for state wildlife managers.

In addition to already-existing conservation programs, in recent years, dozens of major new projects and programs have increased demands on Fish and Game. They include the Bay-Delta Restoration and CALFED Programs, implementation of the Marine Life Management Act and the Marine Life Protection Act, Headwaters Forest management and monitoring, Natural Community Conservation Planning in Southern California and elsewhere, habitat conservation planning, relicensing of hydropower projects, Salton Sea restoration, Yolo Basin Wildlife Area planning and management, the bighorn sheep recovery project, the Lower Colorado River Habitat Conservation Plan, and environmental review of the expansion of San Francisco International Airport, to name only a few.

### *Resources Needed for Regional Planning*

Constant conflicts between development projects and protection of endangered species have led conservation scientists, stakeholders, and Fish and Game to recognize the value of regional planning for habitat conservation and protecting biodiversity. The goals of these broader proactive approaches to conservation are to identify and protect key habitats and designate areas more appropriate for development well in advance of planning for individual projects in a region. Fish and Game serves numerous important functions in these broader conservation efforts, providing:

- Biological data on individual species, which is then used to develop multispecies conservation plans, recovery programs, and restoration projects;
- Habitat quality and resource assessments, used to identify the most important lands for supporting multiple species;
- Planning and design expertise for conservation planning projects;
- Design of appropriate mitigation measures for effects of development on natural resources;
- Facilitation in bringing diverse stakeholders to the table and assisting them in developing onservation strategies at the local government level; and
- Monitoring implementation of conservation plans and mitigation projects.

These responsibilities are not in lieu of work at the species level. It is the species-level research and management, and particularly implementation of the California Endangered Species Act, that trigger efforts that evolve into the broader conservation planning efforts.

### *Wildlife Conservation Funding Crisis— Recognized But Not Solved*

The fiscal difficulties of Fish and Game have been repeatedly acknowledged by the Legislature but not solved. The Legislature described the problem in statute in 1978, 1990, and 1992, as noted in Fish and Game Code sections below:

Section 710. The Legislature finds and declares that the department has in the past not been properly funded … This lack of funding has prevented proper planning and manpower allocation. The lack of funding has required the department to restrict warden enforcement and to defer essential repairs to fish hatcheries and other facilities. The lack of secure funding for fish and wildlife activities other than sport and commercial fishing and hunting activities has resulted in inadequate non-game fish and wildlife protection programs. (Added to statutes in 1978.)

Section 710.5. The Legislature finds and declares that the department continues to not be properly funded. While revenues have been declining, the department's responsibilities have been expanding into numerous new areas. The existing limitations on the expenditure of department revenues have resulted in its inability to effectively provide all of the programs and activities required under this code and to manage the wildlife resources held in trust by the department for the people of the state. (Added to statutes in 1990.)

Section 710.7 … The department continues to face serious funding instability due to revenue declines from traditional user fees and taxes and the addition of new program responsibilities. (Added to statutes in 1992.)

The fiscal situation has worsened in recent years. Since 2001, the state budget crisis has compounded the funding challenges at Fish and Game. Wildlife and marine conservation programs, which are the primary beneficiaries of the limited General Fund dollars, have suffered dramatic budget cuts. General Fund support for Fish and Game has dropped from $84 million in 2000 to $37 million in 2005.

### *Wildlife Conservation Program Needs*

Fishing and hunting programs and related conservation efforts have specific dedicated funding derived from licenses, fees, and taxes on outdoor equipment. The public-trust duties of Fish and Game and its conservation programs that broadly benefit species, habitats, and ecosystems warrant funding from all Californians. Conservation-related activities that should be supported by broad-based funding may be described within the following four categories:

#### Science and Planning

Managing and conducting resource assessment

Implementing ecological research that supports conservation and management

Developing regional conservation plans

#### Wildlife Conservation and Habitat Restoration

Implementing conservation and recovery plans and projects

Designing, implementing, and monitoring habitat restoration projects

Developing conservation and recovery strategies and plans

**Enforcement for Wildlife, Wildlands, and Marine Resources**

Expanding wildlife and marine enforcement staff and resources

Developing an investigator class of wildlife enforcement staff

**Wildlife Conservation Education and Service**

Educating the public on wildlife conservation issues

Providing interpretive information and public services related to outdoor activities

### *Wildlife Lands Management Needs*

State and federal wildlife and land management agencies and some state policy-makers have expressed great concern for the lack of resources for wildlife conservation, restoration, and enforcement on public lands. The needs for operation and maintenance of lands managed by Fish and Game are discussed below. The U.S. Fish and Wildlife Service, BLM, the Forest Service, the National Park Service, and California State Parks have similar challenges to fund the restoration and management of wildlife areas, parks, and other wildlands.

Fish and Game manages wildlife areas, ecological reserves, and wildlands specifically for the benefit of wildlife and important habitats. These lands are a cross section of California's remarkable natural diversity of animals, plants, habitat types, and ecosystems. Some of the state's finest-quality wildlife habitats are represented in these holdings. But acreage of lands managed by Fish and Game has quadrupled in the last 25 years, from 250,000 acres in 1980 to 1 million acres today, and funding to manage these lands has not kept pace. Major bond acts and some appropriations have funded acquisition of new lands for wildlife, but there is not a corresponding source of funding to maintain, restore, and manage these lands. Land management entails providing site security, managing public health and safety on the lands, managing wildlife and natural resources, maintaining infrastructure, and managing recreation and other uses.

The consequences of neglecting lands are many:

- An area that is not secure or regularly inspected invites trespass by individuals and livestock and encroachment by such adjoining land uses as agricultural operations and off-road vehicles. Trespassing often involves vandalism and dumping. The result is degradation of the land, and the state is seen as a bad neighbor.
- The wildlife values of the lands are also compromised without management. The habitat is degraded if invasive species are not controlled, fire is not managed, and ecosystems functions are not maintained.
- Lacking restoration efforts and/or management, many acquired lands do not meet the habitat goals for which they were purchased.

- Many lands have major public-use and education potential, which cannot be realized without staff resources.

State wildlife lands have been acquired for specific conservation or recreation goals. Managing lands for their intended purpose requires staff and resources. Depending on the intended purposes of the land and the habitat values, Fish and Game's Lands and Facilities Branch estimates annual land operating management costs for many wildlife areas to range from $16 to $100 dollars per acre. Local agencies estimate land operating and management costs to be significantly higher. In 2005, maintenance, restoration, and management of Fish and Game's wildlife areas and ecological reserves were supported, on average, at the level of $13 per acre and one staff person per 10,000 acres. Many lands were operated at $1 per acre, with no dedicated staff (DFG Lands and Facilities Information Sheet).

### *New Funding Options*

California is not unique in its difficulties with establishing an adequate and reliable revenue source for its wildlife conservation department. Numerous other state wildlife departments that have also evolved from fishing and hunting management organizations to expanded conservation organizations are also struggling to secure additional and more
reliable funding.

Federal funding accounts for 23 percent of Fish and Game's budget. Federal funds are provided through several programs, including the U.S. Fish and Wildlife Service's programs pursuant to Section 6 of the Endangered Species Act, the federal State Wildlife Grants Program, programs pursuant to the Sport Fish and Wildlife Restoration Acts, wetlands grant programs of the U.S. Environmental Protection Agency and U.S. Forest Service, and grant programs provided pursuant to the Clean Water Act.

Most state wildlife departments, in addition to receiving federal funding, are funded by a combination of user fees; a few tap into general sales-tax revenues. State wildlife department funding mechanisms include non-consumptive user fees, state lottery revenue, general sales tax, vehicle license plate fees, real estate transfer fees, tax check-offs, and natural resource extraction surcharges.

California's Environmental License Plate Fund Program generates funds for environmental and natural resources departments. However, these funds are usually appropriated to Fish and Game in lieu of General Fund dollars rather than to augment the base budget. In California, some of the better funded resource departments and water agencies have funded a Fish and Game position to ensure certain wildlife-related services are provided.

Arkansas and Missouri have two of the better-funded state wildlife programs. Both of these states have constitutional mandates that devote a percentage of general sales tax dollars to wildlife conservation. In 1976, Missouri enacted a constitutional amendment that raised the sales tax by one-eighth of a cent, generating about $70 million annually for wildlife management and conservation projects. In

1996, Arkansas enacted a similar constitutional amendment, which yields about $20 million annually for wildlife programs.

In 1991, the California Legislative Analyst's Office identified several user or impact fees that have a connection to wildlife and might be assessed to fund Fish and Game. They are:

- **Motor-vehicle and highway impact fees**—Vehicles and the highways affect wildlife in several significant ways. Road kills account for substantial mortality of many species, including deer, owls, and snakes. More deer are killed by collisions with vehicles than by hunting. Habitat is eliminated and fragmented by roads and highways. Oil and other chemicals from roads pollute aquatic ecosystems. And invasive species are often introduced along highways. Impact fees could be assessed as an increase in sales tax on vehicles sales, or a flat-rate surcharge could be attached to vehicle registration fees. Assessing an additional $1 per vehicle registration would generate approximately $26 million. Another option is a surtax on vehicle fuels. The California Constitution allows gasoline tax dollars to be used for environmental mitigation related to construction and operation of roads and highways.
- **Nonpoint source discharge fees**—Pollution from diverse sources runs off into wetlands and aquatic ecosystems. Those who create nonpoint source discharges could be assessed a fee to mitigate wildlife conservation impacts.
- **Water use fees**—Water diversions from rivers, streams, and the Delta significantly affect fish, amphibians, and aquatic life. To mitigate these effects, the Legislature could impose a water-use fee on each acre-foot of water to fund wildlife conservation. A penny per acre-foot would generate about $220,000.
- **Wastewater discharge fees**—Pollution from industrial point sources degrades fish and aquatic life. Dischargers currently pay a fee that funds the State Water Resources Control Board's water quality regulatory program.
- **Recreational fees or taxes**—Currently, only hunting and fishing recreational users pay annual fees for a license. Additional user fees could be assessed for other wildlife-related user activities, including birding, diving, and whale-watching.
- **Mining fees**—Gravel- and open pit mining affects wildlife. For example, gravel mining from streambeds degrades salmon spawning grounds and degrades aquatic habitat. To fund wildlife conservation mitigation, a fee could be charged per volume of material removed.

Broad-based fees or taxes, such as a flat-tax surcharge on annual state income tax, a parcel tax or parcel transfer fee, or a percent of sales tax, are in line with the policy that wildlife is a public trust resource and the responsibility of all Californians. If California followed the Missouri and Arkansas examples and enacted a one-eighth of a percent surcharge on sales tax, it would generate about $650 million for wildlife conservation and management of natural resources.

### Other Multispecies Conservation Planning Efforts

In addition to NCCPs, conservation planning is under way in a variety of other forms throughout the state, including Habitat Conservation Plans, recovery plans, species-group plans (including Joint Ventures), restoration plans, watershed plans, river management, and land-use or habitat management plans. The following is a brief introduction to each of these types of plans. More information can be found in Appendix C.

Habitat Conservation Plans (HCPs) are long-term agreements between the U.S. Fish and Wildlife Service (FWS) and an applicant (private landowner or nonfederal public land manager). They are designed to offset any harmful effects that a proposed activity might have on federally listed threatened and endangered species.

Recovery plans are FWS documents prepared for one or more federally listed species that detail the specific tasks needed for recovery. These plans provide a blueprint for private, federal, and state agencies to cooperate in conserving specific species and their ecosystems.

Species-group plans address the conservation needs of related species. Two broad initiatives in this regard are the North American Bird Conservation Initiative and the Marine Life Protection Act Initiative. There are also planning efforts regarding other species groups and subgroups, including amphibians, reptiles, and bats.

The North American Bird Conservation Initiative is a conservation effort across the continent that brings together public and private organizations to focus on bird conservation. This initiative integrates both national and regional bird conservation plans as well as habitat Joint Ventures. National bird plans provide recommendations for conserving water birds, shorebirds, seabirds, and land birds across the country. Regional plans in California provide actions that are more specific for Southern Pacific shorebirds, California Current marine birds, and bird habitats in riparian areas, coniferous forest, coastal scrub, grassland, oak woodland, shrub steppe, and the Sierra Nevada. These plans provide status and life history information, assess conservation needs, and recommend conservation actions.

Habitat Joint Ventures are regionally based coalitions of public and private organizations that integrate multiple bird conservation plans with a specific geographical area. California hosts all or part of six Joint Ventures (California Riparian, Central Valley, Intermountain West, Pacific Coast, San Francisco Bay, and Sonoran), with a seventh one (California Current) under development for the marine region.

The Marine Life Protection Act Initiative is also a multispecies- and habitat-focused effort. It is a cooperative public-private partnership of the Resources Agency, Fish and Game, and a nongovernmental organization to expand, fund, and manage a system of marine protected areas along the California coast.

Habitat restoration plans range in scope from a few acres to CALFED's Ecosystem Restoration Program that covers much of the Central Valley and San Francisco Bay Area. These efforts aim to restore natural resource conditions that have been damaged, including revegetating riparian habitat, reducing erosion, improving water quality, restoring fish passage or habitat, and removing invasive species. Hundreds of restoration planning efforts are currently under way throughout the state.

Watershed plans and river management plans include wildlife conservation and restoration as an important element. Watershed plans usually focus on smaller drainage areas than river plans. Both types are typically very collaborative in nature, involving many different stakeholders. Watershed plans integrate habitat conservation with other natural resource concerns, such as water quality, water supply, flood control, recreational use, erosion, and fire management. These plans are typically nonregulatory documents, although some are designed to meet water quality standards under the Clean Water Act (total maximum daily load (TMDL) standards).

Land use plans, whether developed by local government or public land managing agencies, also have wildlife conservation as major feature. Local land use plans include city or county General Plans. Large public land managers, such as the U.S. Forest Service, Bureau of Land Management, or Department of Defense, have land and resource plans that can cover 1 million acres or more. Smaller land managing agencies, such as the California Departments of Fish and Game and Parks and Recreation, also develop habitat and recreation management plans for lands they manage.

Although these land use plans play an important role in integrating a variety of land and natural resource issues, they typically do not address wildlife issues that spread onto neighboring lands beyond the set administrative boundaries.

## NCCP Program Accomplishments

The first two NCCPs were approved in 1996 and 1997; these were the Orange County Central-Coastal Natural Community Conservation Plan and the San Diego Multiple Species Conservation Program (covering southwestern San Diego County).

By the end of the 1990s, nine NCCPs were under way in San Diego, Orange, Riverside, Los Angeles, and San Bernardino counties.

In August 2000, a programmatic NCCP was approved for the massive CALFED Bay-Delta Program covering water infrastructure and habitat restoration projects throughout the Sacramento–San Joaquin Delta, San Francisco Bay, and Central Valley.

In July 2004, the Western Riverside Multiple Species Habitat Conservation Plan, covering 1.2 million acres and 146 species, was approved.

By early 2005, five Northern California regional conservation planning efforts signed NCCP planning agreements, and three others were in early discussion.

The first "working landscape" NCCP is being developed by the Mendocino Redwood Company to address timber harvest.

NCCP will be the approach used to resolve Colorado River water transfer issues for the Salton Sea Ecosystem Restoration Project.

Today, there are 31 active NCCPs of varying scope and complexity; 10 others have been approved. Eleven counties are participating in NCCP planning.

## State and Federal Entities Involved in NCCP Development

Because each NCCP plan is uniquely designed to fit the issues, ecology, and politics of the region it covers, a list of other state and federal entities that could be involved varies with each plan. The following is representative of how some state entities have participated.

### NCCP Participation by State Agencies

**Resources Agency**–The umbrella agency over Fish and Game and other resource departments, the Resources Agency was instrumental in launching the NCCP program and providing political support in the programs formative years.

**Wildlife Conservation Board (WCB)**–The land acquisition entity for Fish and Game, the WCB acquires habitat lands at the request of Fish and Game to support NCCPs and other programs. WCB staff participate in the Southern California NCCP management meetings to assist with coordination of land acquisition.

**State Conservancies**–There are several state-sanctioned conservancies whose missions are to protect natural habitats in specified geographic areas. The conservancies often receive earmarked funding from land acquisition bond acts. They work with the Wildlife Conservation Board and Fish and Game to acquire lands to meet the reserve design of approved NCCPs.

**Department of Parks and Recreation**–Some NCCPs have state parks within their borders that are managed to protect natural biodiversity. As appropriate, state parks can be included in the reserve design to assist with conservation of species, natural communities, and ecological processes.

**Universities**–Scientists from California's universities are instrumental in creating a solid scientific foundation for the plans. University faculty members often serve as science advisers throughout plan development and implementation. They also carry out targeted studies in the plan areas to resolve critical uncertainties and improve knowledge of natural ecological systems, and they apply experimental management treatments to support monitoring and adaptive management.

**Caltrans**–The California Dept. of Transportation oversees all highway construction and improvement projects. Existing and future highways can have significant effects on reserve design and species, and Caltrans will likely need take authority to construct road projects. It is important that Caltrans be involved in NCCP planning,

### NCCP Participation by Federal Agencies

**USFWS–**The U.S. Fish and Wildlife Service is the lead federal partner in the development of an NCCP. The USFWS issues permits in conjunction with an NCCP when federally listed threatened or endangered species are covered by a plan.

**USGS–**The Biological Resources Division of the U.S. Geological Survey participates in implementing NCCP plans in Southern California by coordinating ecosystem monitoring and conducting targeted studies.

**BLM**–The U.S. Bureau of Land Management has significant landholdings in California. BLM coordinates new acquisitions to fulfill reserve design goals of NCCPs.

**Army Corps of Engineers–**The Corps of Engineers is consulted when a plan affects wetlands. In this case, plan participants work through a parallel wetland permitting process with the Corps of Engineers, so that projects covered by the NCCP may also have a streamlined wetland permitting process.

## Mandated Responsibilities of Fish and Game Since 1968

Major conservation mandates enacted by the Legislature or by Initiative include:

**1968–Fish and Game Management Policy** Authorizes Fish and Game to establish ecological reserves to protect specialized habitat types and dependent species for the benefit of the general public and for research. Establishing ecological reserves involves evaluating potential land acquisitions, assessing fish and wildlife values, preparation of management plans, management and maintenance of lands, monitoring species and habitats, and providing public services at selected ecological reserves.

**1969–Porter-Cologne Water Quality Control Act** Establishes the basic authority of the state and regional water quality boards. Fish and Game's duties include water quality investigations, water quality monitoring, and lab work performed under agreement with state and regional water quality boards.

**1970–California Environmental Quality Act (CEQA)** Requires the review of projects and activities that affect the environment. Fish and Game's work includes reviewing environmental documents and providing comments to lead agencies on the potential effects of projects and activities, recommending mitigation measures to reduce or offset the impact of projects and activities, and monitoring compliance with mitigation requirements. Also, Fish and Game must conduct the environmental review of wildlife area management plans and hunting and fishing regulations.

**1970–Conservation of Aquatic Resources** Authorizes Fish and Game to manage aquatic resources, which includes resource assessment, developing sport and commercial fishing regulations, monitoring fish harvest rates, and managing of aquaculture.

**1974–Conservation of Wildlife Resources** Requires Fish and Game, as trustee for fish and wildlife resources, to consult with lead and responsible agencies and provide biological expertise to review and comment upon environmental documents and impacts arising from projects activities, per CEQA.

**1976–Fish and Wildlife Conservation Policy** Requires Fish and Game to regulate projects or activities that affect streams and lakes. Fish and Game's duties include reviewing proposed projects, working with project proponents to minimize or offset negative affects on natural resources, developing written agreements, and monitoring implementation of projects.

**1977–Native Plant Protection Act** Requires Fish and Game to establish criteria for determining if a native plant species is rare or endangered and to enforce laws protecting those plants. Authorizes Fish and Game to conduct botanical research and field investigations and hold hearings to determine conservation measures needed to protect native plants. Authorizes Fish and Game to develop regulations (for adoption by the Commission) to protect plants.

**1981–Significant Natural Areas** Establishes the Significant Natural Areas Program and requires Fish and Game to maintain a natural resources data management system (Natural Diversity Database –NDDB); consult with federal, state, and local governments and interest groups; report on those natural areas deemed to be most significant; and seek ways to protect and conserve those areas. Work includes gathering, validating, and updating information to be included in the NDDB and maintaining and improving the NDDB system (both hardware and software).

**1982–Streamflow Protection Standards** Requires Fish and Game to identify and list those streams and watercourses for which minimum flow levels need to be established to assure the continued viability of fish and wildlife resources. Also requires Fish and Game to prepare proposed streamflow requirements for those listed waters. Work includes streamflow studies and consultation with various federal, state, and local governments and other interested parties.

**1984–California Endangered Species Act** Under this act, the Fish and Game Commission determines whether a species should be listed as threatened or endangered. Fish and Game evaluates petitions for listing or delisting; prepares status reports to the Fish and Game Commission; controls and authorizes the take of listed species pursuant to specific terms through permits, agreements, and memoranda of understanding; develops and implements species recovery plans; and enforces the protections for listed species. Fish and Game also works with the agriculture industry to minimize incidental and accidental take of endangered species.

**1985–Fisheries Restoration** Pursuant to this act, Fish and Game administers a program to fund restoration projects, consults with various agencies and groups in selecting projects to be funded, and conducts pre-project and post-project evaluations.

**1988–Salmon, Steelhead Trout, and Anadromous Fisheries Program Act** Requires Fish and Game to develop a program to increase natural production of salmon and steelhead and to consult with various groups and agencies in developing the program.

**1988–Wildlife and Natural Areas Conservation Program** Funds Fish and Game and the Wildlife Conservation Board to acquire, enhance, restore, and protect land and water resources for the conservation of important habitats. (Enacted by Prop. 70.)

**1990–California Wildlife Protection Act** Creates the Habitat Conservation Fund and directs the use of those funds. (Enacted by Prop. 117.)

**1990–Inland Wetlands Conservation Program** Administered by the Wildlife Conservation Board, this program implements the Central Valley Habitat Joint Venture. Fish and Game assists the board with the implementation of the program, including acquisition and restoration of wetlands.

**1991–Natural Community Conservation Planning Act** Authorizes Fish and Game to enter into agreements for developing and implementing regional multispecies conservation plans. Work includes consultation with organizations and governmental agencies; determining standards and guidelines; gathering and using public input; monitoring and reporting; establishing and working with advisory groups; and conducting surveys and resource assessment activities.

**1998–Marine Life Management Act** Requires Fish and Game and the Fish and Game Commission to manage marine fisheries through the development and implementation of fishery management plans. The act requires that Fish and Game proactively maintain sustainable fisheries and healthy marine ecosystems. The Act requires the department to involve stakeholders in the development of marine management plans and to use the best available science.

**1999–Marine Life Protection Act** Requires Fish and Game to develop a master plan for modification of existing and designation of new marine protected areas for adoption by the Fish and Game Commission. The Act includes public input and scientific peer review during the planning process.